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ABSTRACT

An initial research step, developing an effective interview strategy, presents unique challenges for novice and master research alike. To focus qualitative research in the human ecology of the study, the strategy presented in this paper used an initial interview protocol and preanalysis process, called meta-analysis, prior to developing the formal interview protocol. Meta-analysis of initial interview data provides the researcher with an inductive tool to assess, modify, enhance, and focus the formal interview protocol. Preparing for the research journey requires a human ecology-based interview protocol to acquire data from which concepts, categories, properties, and theory can emerge. (Contains 3 tables and 14 references.) (Author/SLD)

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META-ANALYSIS: AN APPROACH

Meta-Analysis: An Approach to Interview Success

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Dr. Mark McCaslin is an Assistant Professor of Adult Counselor and Technology Education at the University of Idaho, Idaho Falls Campus. McCaslin earned both Baccalaureate and Masters degrees from the University of Wyoming, and conducted his doctoral work in Adult Education at the University of Nebraska – Lincoln. Dr. McCaslin's doctoral dissertation and several subsequent investigations and publications have focused on leadership via qualitative methodologies. Other areas of emphasis are interpersonal communication, community action, and qualitative research methods. McCaslin has recently designed a new data analysis approach with specific applications for the Grounded Theory tradition.

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Abstract

An initial step, developing an effective interview strategy, presents unique challenges for the novice and master researcher for "if the questions one asks are not crucial, then differences in responses are not crucial either (Creswell, 1998)". To focus qualitative research in the human ecology of the study, our strategy uses an initial interview protocol and preanalysis process, called meta-analysis, prior to developing our formal interview protocol. Meta-analysis of initial interview data provides us with an inductive tool to assess, modify, enhance, and focus the formal interview protocol. Thus preparing for the research journey requires a human ecology-based interview protocol to acquire data from which concepts, categories, properties, and theory can emerge.

Meta-analysis: An Approach to Interview Success

Introduction

The use of meta-analysis as an approach to design effective, successful interview protocols has direct implications on grounded theory and ethnographic research designs, and perhaps on other qualitative traditions as well. Meta-analysis is the coding, interpretation, and valuing of the initial responses garnered from a small homogeneous informant group through initial interviews, which, as shown in Figure 1, include framing, main, and probing questions. In this context, the product of meta-analysis forms an analytical and interpretive complex constructed from initial interview protocol data. The complex becomes critical for moving a grounded theory research study beyond the creation of a theoretical position towards a workable and testable theory truly grounded within the human ecology (McCaslin, 1996). As such, meta-analysis adds an essential new step to grounded theory by reconciling initial interview data acquired from a homogenous group of informants that, in turn, deepens our understanding of the human ecology, enhances our awareness through constant comparison. This human ecology-based awareness is best achieved by paying attention to the culture, habits, and traditions of the environment in which we find ourselves (McCaslin, 2002). Meta-analysis provides the reflective pause necessary to see the connections between initial informant data and the environment. The end result of a study utilizing meta-analysis is the creation of rich full-grounded theories.

Grounded theory designs, and associated coding sequences, have long suffered from a lack of a complete understandable analysis sequence. There are far too many magical moments where the researcher must take a leap of faith and leave behind data,

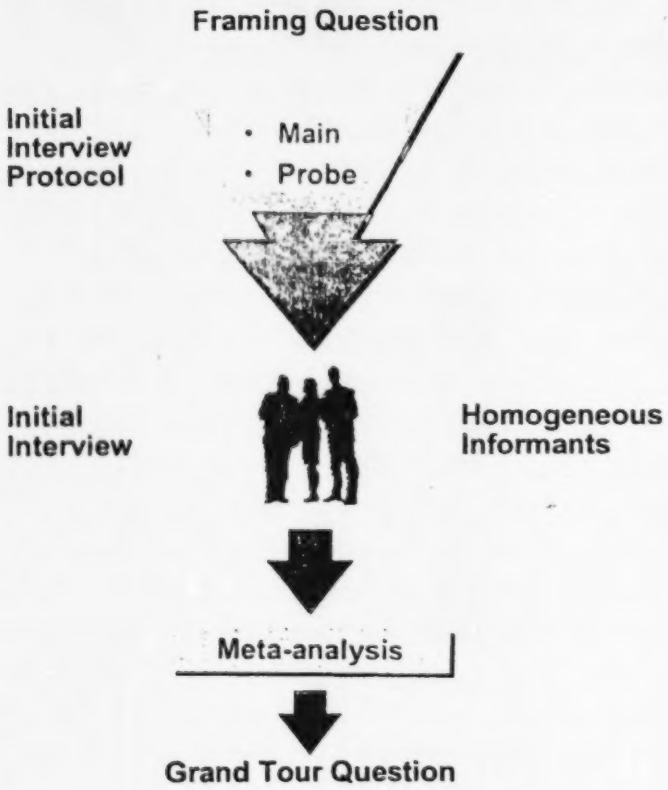

Figure 1. The initial interview data are used during meta-analysis.

informants, and protocols that may not quite capture the intent of the phenomenon under study. This paper examines the relationship between grounded theory design, the nature of the informant, interview protocol development, and the interview process.

Traditional Grounded Theory

Grounded theory, first brought forth by Glaser and Strauss (1967), provides an excellent framework for discovering emerging theory using comparative analysis. Comparative analysis provides predictions, explanations, interpretations, and applications framed around informant data. If the primary qualitative traditions, phenomenology, case study, biography, ethnography, and grounded theory (Creswell 1998), are about observing and experiencing the human ecology, then predictions and applications become

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secondary during early stages of any qualitative inquiry. In most studies of grounded theory design, there is a tendency to spend an inordinate amount of time drawing deductive conclusions, thus leaving the inductive modality. We have methods to code data, draw conclusions, put forward theory, and even suggest action applications. What we lack are clear mechanisms for preparing ourselves for data collection, gathering data, and developing sensitivity towards the study ecology. Addressing these shortcomings is imperative as research employing the grounded theory tradition can suffer if the researcher is not sensitive to the ecology revolving around the phenomenon of interest.

Addition of Meta-analysis in Grounded Theory

Grounded theory is about discovery. Adding the process of meta-analysis prior to extensive interviews allows the researcher to explore the ecology, reflect on initial data, and appreciate connections within the ecology. However, discovery in the human ecology can only emerge when the researcher understands and appreciates the relation and meaning of the data collected to the ecology itself. The process moves the researcher into an inductive mode that involves reflection on homogeneous informants' data grounded in the ecology. The researcher must explore, discover, and connect the research data to the ecology to gain sensitivity. Therefore, the process is dependent upon the intricate relationships within the ecology from which the data were derived for emergence of a theoretical position, a precursor for emerging theory. As the emerging theory is conceptualized and generalized, it becomes abstract of time, place, and people from which the data are discovered and evolves from substantive to a higher level, a formal theory (Glaser, 2001). Meta-analysis prepares the researcher for this journey to formal theory by adding a reflective pause before formal interviews start.

With the inclusion of three techniques - theoretical conditioning to the human ecology and selective questioning in stage 1, and meta-analysis in stage 3 (shown in Figure 2), this research design departs from the traditional grounded theory approach. During the inductive processes of stage 1, theoretical conditioning is given real weight (Glaser, 1978; Strauss & Corbin, 1990). Glaser (1978) advises the researcher to enter the discovery process with a minimum of predetermined ideas. His concern is that the researcher does not set out to affirm a preexisting hypothesis, but rather be open to the discovery of new knowledge. Strauss and Corbin (1990) referred to theoretical conditioning as, "...the attribute of having insight, the ability to give meaning to data, the capacity to understand, and the capability to separate the pertinent from that which isn't." Their approach stresses awareness of the activities within the ecology as it relates to the data, and shows less concern with preexisting hypothesis than lack of insight or knowledge about the ecology. Given these two approaches, we are faced with the choice on which side do we err - bias or ignorance?

With the addition of theoretical conditioning, the researcher not only spends time understanding central issues related to the phenomenon of interest through exploring key literature, but also spends equal time understanding the human ecology from which the data emerges. The researcher uses knowledge sorting to integrate literature findings and awareness of the human ecology to generate understanding. This prepares the researcher to examine key concepts, phenomena, and events that emerge from this initial exploration and to begin organizing them according to current knowledge of the ecology. This

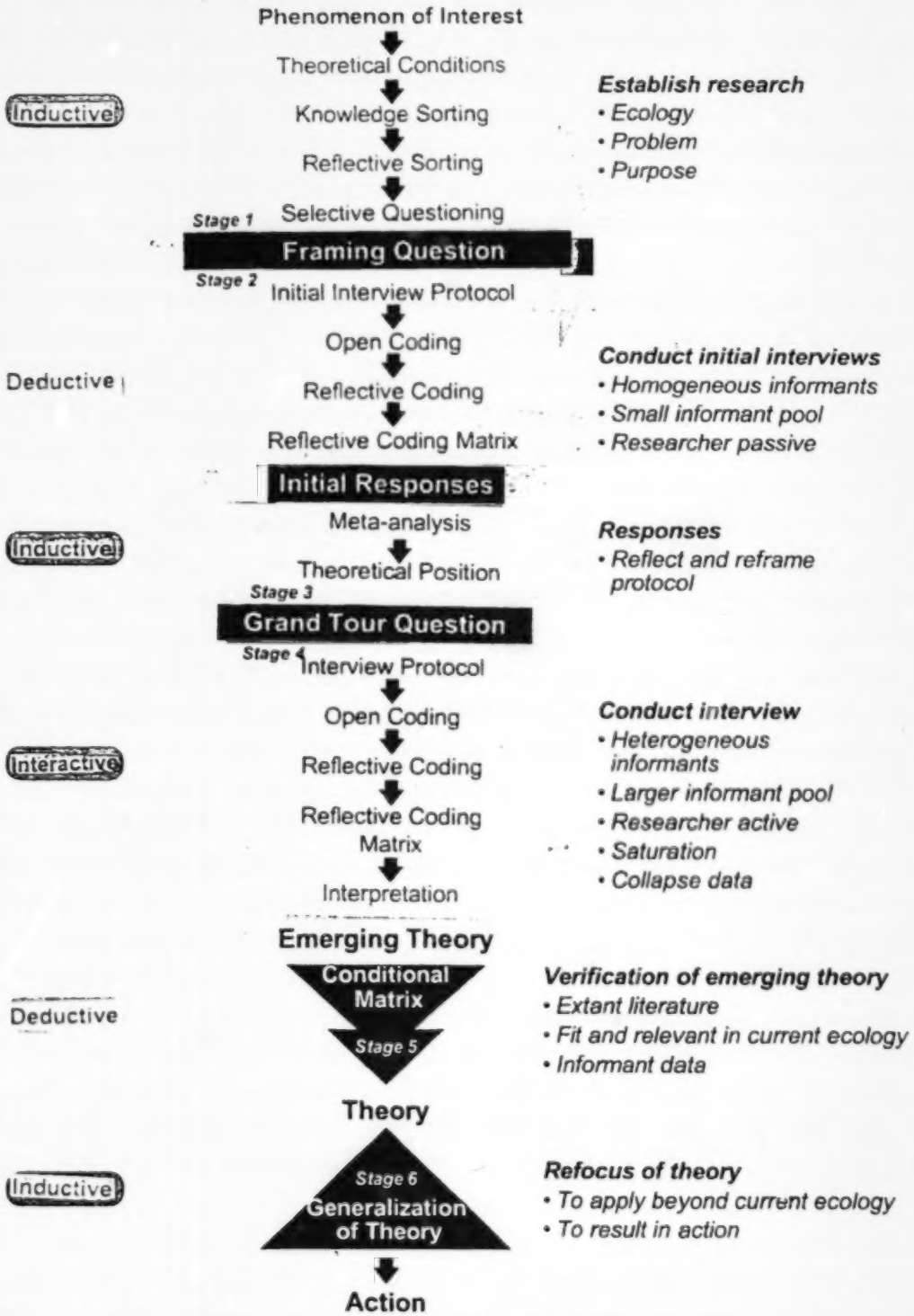

Figure 2. The six stages of grounded theory including meta-analysis.

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process, called reflective sorting, develops and integrates the description of the setting, informants, processes, and events. Moreover, the reflective sorting process provides a triangulation and verification framework for use later when constructing meaning from emerging theory.

Selective questioning, the second departure from traditional grounded theory design, is a systematic process of defining the area of interest. An examination of the facts obtained during knowledge and reflective sorting helps to frame the study. Questions raised during this process can be helpful in guiding the research and allows the researcher to reflectively generate the initial purpose and problem statements and framing question, i.e., the precursor to the grand tour question, the overarching research question being examined in the study in its most general form (Creswell, 1994). In essence, during this initial inductive stage, we reveal the holistic nature of the ecology and begin the process of defining potential research aspects related to the phenomenon of interest.

Often we think too far forward and forgo reflecting on our initial interview protocol. If the central elements critical for the process are neither completely understood nor appreciated, formalizing the purpose of the research and creating the grand tour question can be an arduous task. The idea that our initial overarching question can stand without first testing it in the human ecology is rarely accurate. When the human ecology is not taken into consideration, the researcher using traditional grounded theory can erroneously create a grand tour question and subsequent main and probing questions from an incomplete perspective. In contrast, using theoretical conditioning and selective questioning, the researcher develops a framing question for the initial interview process

that recognizes the interrelatedness of the ecology, the informants, the problem statement, and the purpose of the research.

This leads us to the third departure from traditional designs in grounded theory methodology, meta-analysis. Most studies explore only a homogeneous informant pool when gathering data, doing an open and reflective coding process, and producing a reflective coding matrix. The product derived from this process is, at best, a theoretical position, not a workable or testable theory. Thus, it is our position that grounded theory designs not linked to the research ecology through meta-analysis end with a theoretical position as opposed to a theory.

Without using the three steps outlined above, the researcher is most likely to conclude research with an understanding of the implications of the study relative only to a homogenous group of informants. In comparison, meta-analysis increases the researcher's sensitivity to the human ecology by initial efforts to frame context, dialog with informants, evaluate the questioning the process, and explore related topics in the extant literature all of which are essential for the emergence of a theory of true significance to the human ecology. The result of these efforts, coupled with theoretical conditioning and selective questioning, is development of an ecology-based grand tour question that frames the phenomenon of interest and elicits rich data from a heterogeneous informant pool.

McCaslin (2002) researched and articulated the essential components of stage 1, theoretical conditioning and selective questioning. To facilitate fledgling graduate students' understanding of the importance of the human ecology, this paper's focal points are stages 2 and 3 (shown in Figure 2), initial interviews and meta-analysis. Without an

understanding of the ecology, good research projects become derailed due to a lack of comprehension of the problem and purpose framed in the human ecology.

Planning the Initial Interview

In qualitative interviewing the researcher strives for understanding by encouraging informants to describe their world in their own terms and to provide in-depth details of their successes and concerns on the research topic (Rubin & Rubin, 1995). During the initial interview, the researcher poses the framing, main, and probing questions to a small homogeneous pool of informants and records their responses. The researcher listens with a "big ear" (Glaser, 2001). In doing so, the researcher plays a relatively passive role in the initial interview to become familiar with the research ecology. The following research study is offered to demonstrate the process of developing initial interview protocol and then taking a reflective pause via meta-analysis.

Selective Question Approach

Two groups in a graduate qualitative research methods class worked independently to establish an interview process. Interviews focused on the framing question – "How are dissertation topics discovered, developed, and chosen?" The activity, designed to familiarize class members with the interview process and data coding, appeared to be a straightforward, sequential learning task. Due to the narrow scope of the question, both groups developed a topical interview protocol by fashioning main questions to probe the "what, why, and how" of dissertation topic selection (Rubin & Rubin, 1995).

Each group selected a semi-structured interview format to obtain specific information (Rubin & Rubin, 1995) on class members' progress in the dissertation topic

selection process. The sample pool of informants, class members, represents a homogeneous group of graduate students considering topics and a qualitative methodology for their adult education masters or doctoral research.

Initial Interview Protocol

Although the groups worked independently, both developed similar interview protocols and conversational guides to tailor an in-class interview to one hour. The guides contained a descriptive heading, main questions, and suggested probe questions much like the interview protocol described by Creswell (1998). To avoid overwhelming informants with too many topics, the interview focused on four main questions designed to draw out topic details and to achieve shared understanding between the interviewer and informant on the framing question. In addition, the questions were ordered in a fashion to facilitate normal conversational flow during the interview. Also, to capture as much data on the ecology as possible in an hour-long interview, the group provided space for recording informant comments as well as interviewer reflections directly on their interview form.

The initial group task, developing a few main questions, seemed simple enough. But to develop four main questions that adequately covered the framing question required three hours! The time investment resulted in main questions that scaffolded the interview. In addition to generating main questions, probe questions were also developed. Probes are used to deepen the response to a question, increase the richness of the data being obtained, and give cues to the informant about the level of response desired. (Patton, 1987).

The main questions and accompanying probes (shown in Table 1) are

- Worded broadly enough to encourage the informant to express their thinking and knowledge, but narrow enough to provide specific data on the topic
- Customized to draw out what the informant might know
- Designed to cover the overall topic
- Worded so it is easy for the informant to understand the question focus (Rubin & Rubin, 1995)
- Worded to generate ideas that lead to further inquiry (Tanner, 2000)
- Posed with nondirectional wording that describes rather than quantifies to avoid forcing responses (Glaser, 1992; Creswell, 1998).

Initial Interviews

Setting the scope and boundaries of these initial interviews was straightforward as all informants were aware of the interview focus. Prior to the initial interview process, conversational partners spent several class periods getting acquainted. Because interviewer/informant pairs came from different groups, each group's protocol was used to collect data as both conversational partners participated in the role of interviewer and informant. Each interview explored unique facets of dissertation topic level of maturity and proposed research methodology. Because informants were at different stages of topic development, probes greatly assisted the interviewer in tailoring the discussion based on topic maturity and clarifying the meaning of terms unique to the topic. Through the use of probes, the interviewer also communicated interest in their conversational partner's comments (Rubin & Rubin, 1995), which built trust and lead to more complete answers. Additionally, through annotations in her journal, Carlson captured informant

nonverbal responses, as well as her personal reactions and feelings about the interview process.

Following the interviews, the two groups compiled and coded informant responses and critiqued their interview protocol. Posed questions seemed to explore the framing question with an acceptable level of completeness, as several areas appear to saturate with our limited sampling. Glaser (2001) reminds, "saturation is not seeing the same pattern over and over again. It is the conceptualization of comparisons of these incidents which yield different properties of the pattern, until no new properties of the pattern emerge."

Coding Process

The two groups developed separate strategies to analyze data from the homogeneous informant pool. Although the graduate course content examined many qualitative methodologies, each group used a grounded theory coding strategy to conceptually order the initial interview data. The groups captured and coded informant comments. Data coding focused on observations, interviews, and interviewer journal entries. Rubin and Rubin (1995) state that

> The researcher may sort out and balance what different people say, especially if there are contending interpretations of the same events. Then the researcher creates narrative based on this analysis. The topical researcher is more like a skilled painter. The events portrayed did occur and were learned about through the interviews; the information is still grounded in the informants' lives and stories. But the narrative is the truth

as heard and interpreted by the researcher. It is an artist's rendition.

(p. 20)

Likewise, meta-analysis interprets "truth" based on initial interview data through an inductive process.

As the first analysis step, one of the groups wrote the four main questions on the board and entered all informant data under the respective question. Each group member explained their informant's comments in context of the interview dialog. In addition, interviewers explained terminology unique to the research topic so all understood unfamiliar terms. After listing all interview data, group members recorded each informant comment on individual index cards, for use during the group's open coding process. Comments occurring several times were entered once with the number of occurrences noted on the card. Capturing comments on cards prior to coding served to separate the comments from the main questions thereby allowing group members to focus solely on the data. Such separation forced members to hear what the informants recounted about the topic selection process, allowing members to clarify the meaning and context of comments and to reflect on the data without a structured relation to the main questions (Strauss & Corbin, 1990).

The group then developed a reflective coding matrix (McCaslin, 2002) using motivational influences as the category scaffolding. Table 2 shows the group coding result. Passion, personal connections, education, and goal result became the four main properties of motivational influences. The group selected intrinsic and extrinsic processes to order the properties and open-coded the informant data (Strauss & Corbin, 1990). Although not all informant-collected data are included in the coding matrix in

Table 2, the group experienced the deductive logic of the open coding process. Following the inductive process of reflective coding, the group established that a caring mentor, concern for others, and personal connection had profound impacts on topic selection. To the satisfaction of many in the group, the reflective matrix in Table 2 ended the class activity, but the mismatch of the matrix and data concerned one of the participants.

Group Meta-analysis

The group coding process, described above, determined that ten informant comments did not "fit" the matrix shown in Table 2. Carlson reexamined the informant data. Glaser (1992) states "In grounded theory, since all coding, analyzing and constant comparing is emergent, everything fits somewhere as categories and their properties are discovered. Fit is automatic or a concept would not emerge. Grounded theory is very economical on strain and time." Those ten comments did not fit the group reflective matrix because the matrix was not reflective of the data. Another concerning feature of the matrix is the fact that the four properties mirror the four main interview questions. Although informant data were decoupled from the main questions, many in the group still framed the informant comments using the scaffold of the initial interview main questions.

Carlson reviewed research literature on interviewing and the coding process to address these concerns. Rubin & Rubin (1995) provide insight needed to recode the informant data. They state that researchers judge the credibility of qualitative work by its transparency, consistency-coherence, and communicability and should design interviews to achieve these standards. Transparency means that a reader of a qualitative research report is able to see the basic processes of data collection. This is accomplished by

demonstrating that themes examined in one interview have consistency-coherence with the themes presented in others. Furthermore, it indicates that when a single interview seems to present contradictory responses, the disconfirming data are examined across other settings or cases. In qualitative research the goal is not to eliminate inconsistencies, but rather to clearly understand and communicate why they occur.

Strauss and Corbin (1990) motivate the act of concept ordering as necessary to build rather than test theory; provide researchers with analytic tools for handling masses of raw data; help analysts to consider alternative phenomenological meanings; cultivate simultaneous systematic and creative thinking; and identify, develop, and relate concepts, the building blocks of theory. In meta-analysis, data from a homogeneous informant pool are conceptually ordered to establish a robust design for use in the formal interview process. Coding starts with informant words that convey an experience, sensation, emotion, or mental image of an event and embody concepts. Grounding concepts in the data ensure fit, relevance, and workability (Glaser, 2001). The meta-analysis process provides a reflective pause to re-evaluate informant data that have undergone open coding and conceptual ordering.

Theoretical Position Resulting from Meta-Analysis

Reflecting on all the informant data, the category scaffolding of motivational influences still appears appropriate, but risk level is the predominant property linking the informant responses (see Table 3). Hofstede (1997) defines risk in a cultural sense as a percentage of probability that a particular event may happen. Although the definition sounds terribly quantitative, it is very appropriate for the informant data as it clarifies informant uncertainty levels regarding the topic selection process. All informant

responses either indicate comfort with the topic focus or some degree of uncertainty about the challenge ahead. In both reflective matrices shown in Table 2 and 3, the context is still research topic selection, but the strategy of pathfinding is the integrating feature for understanding the consequence of topic selection as shown in Table 3. Pathfinding, the process of selecting the course for research, provides transparency, consistency-coherence, and communicability to all informant data.

Meta-analysis provides the researcher with a view of the ecology and a reflective pause to hear what experts, the informants, in the ecology are saying. In this study the informants are actively involved in finding the path to a topic by identifying risks, potential goals, and barriers before them. The initial data position informants somewhere on the research topic selection continuum shown in Figure 3.

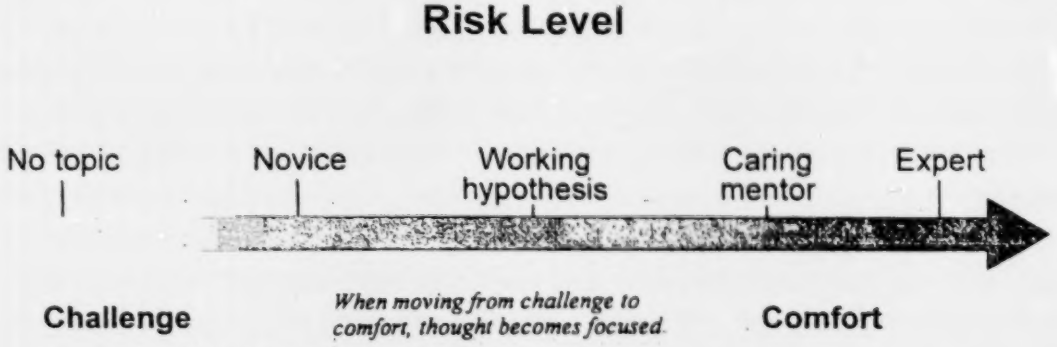

Figure 3. Pathfinding risk level continuum.

Using the strategy of pathfinding, all informant data are "correct" and valued. Palmer (1998) discusses the subject of correctness when he states "The subject itself corrects us, resisting our false framings with the strength of its own identity, refusing to be reduced to our self-certain ways of naming its otherness." Using this pathfinding conceptual ordering approach provides insight into questions that can enhance the formal

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interview process. Questions probing informants about decision strategies used when encountering barriers add data on vital dimensions of risk level.

Preparing for the Formal Interview Process

Because an effective interview protocol looks for similar as well as dissimilar data to foster concepts exploration, the formal interview protocol must include additional questions to cover barriers and goals. As demonstrated in the second coding matrix (Table 3), exploring the pathfinding trajectory requires additional follow-up and norming questions to contrast and compare data acquired from a heterogeneous informant pool. Enhanced probe, follow-up, and norming questions serve to capture and explore the dynamics of the formal interview protocol as the informant pool becomes more heterogeneous. Linking informant data to the risk level continuum (Figure 3) approach that emerges during meta-analysis requires additional probes to uncover barriers informants are facing or have faced as well as strategies used to achieve goals. Glaser (2001) states:

> Grounded theory requires the freedom to interview in whatever style works at the moment or time in sampling for incidents to compare. The questions are content guided based on the emerging theory's categories as the research generates properties of them. Thus emergent questions are emergent interview guides to use on one or a few participants available at the time. Emergent interview questions are NOT to be used with all participants. The analysis of a few interviews will usually change the subsequent questions as the researcher samples for data in different aspects or directions. Much of the time the researcher is just

> listening in a kind of open-ended conversational interview. As analysis proceeds questions are formulated to help saturate categories. (p. 174)

The theoretical position developed during meta-analysis guides the researcher to reflect and develop main, probe, follow-up, and norming questions that enhance the richness of informant data acquired during the formal interview process.

Follow-up questions evolve during the interview allowing an interviewer to pursue the implications of answers to questions posed during the formal interview. The purpose of the follow-up question, to achieve depth, is the hallmark of qualitative interviewing. Using follow-ups, the interviewer pursues discovered themes, elaborates the context of answers, and explores the implications of informant comments. An interviewer needs to develop the skill of employing follow-up questions, especially in a time-limited interview situation, because the luxury of a time-out is not an option. Such a skill involves catching openings for a follow-up, formulating a question, and deploying it right on the spot (Rubin & Rubin, 1995).

Before increasing the heterogeneity and number of the informant pool, the formal interview protocol needs to include norming questions. Initial interviews with a homogeneous group required no norming questions, as all adult education graduate students were familiar with the university graduate program course and research requirements. Expanding the pool of informants to include adult education majors from other universities, or students in other graduate colleges within the same university, requires the addition of norming questions to better interpret answers and compare informants' trajectory on the path to topic selection.

Additionally, for a robust theory to emerge about dissertation topic pathfinding, the informant pool should be expanded to include graduate students who left the program prior to degree completion. The barriers faced by these students are critical for understanding forces that divert the academic trajectory from successful completion of research.

Discussion

The meta-analysis process scaffolds the formal interview process and allows the interviewer to assess, modify, and enhance the initial protocol employed with a homogeneous pool of informants. The initial interview data and conceptual ordering process reveal ways to enhance the formal interview protocol. Meta-analysis assists the researcher in developing a grand tour question relevant to the research ecology.

Using the interview example and casting pathfinding as the core category allows the researcher to focus the formal interview on the process and properties of a journey of discovering a research topic. The interviewer still explores passion, personal connections, education, and goal result but with focused main, probe, follow-up, and norming questions linked to pathfinding. Figure 4 shows the inclusion of meta-analysis as an additional, but critical, inductive step in the grounded theory process prior to formal interviews with a heterogeneous informant pool.

Meta-analysis provides a reflective, inductive pause using homogeneous informant data prior to formal interviewing. In the initial interviews, the interviewer generates as many categories as possible (Strauss & Corbin, 1990), reflects on the coding process, holds clarifying second interviews with members of the homogeneous informant pool, and establishes a focused core category. For the novice interviewer, the

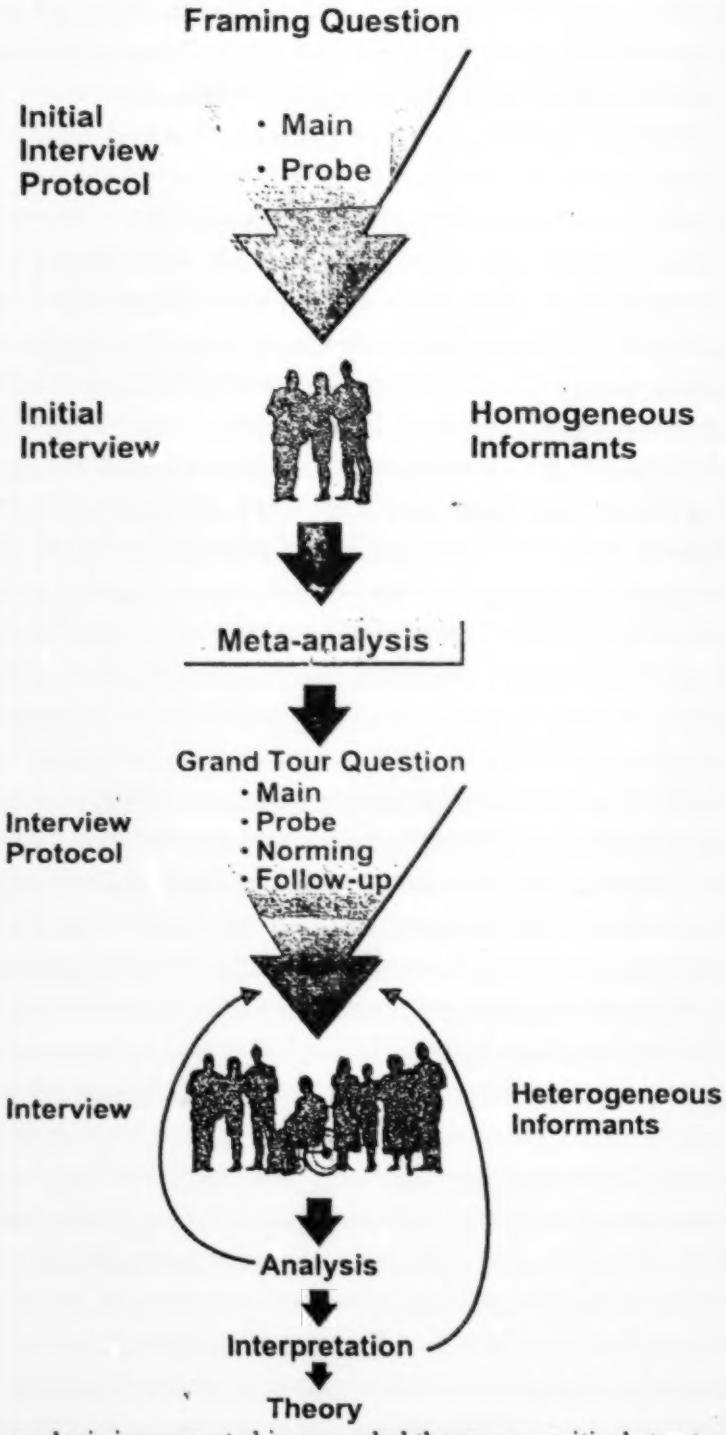

Figure 4. Meta-analysis incorporated in grounded theory as a critical step to provide focus to interview protocol.

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meta-analysis process allows initial conceptual ordering of data prior to the formal interview process. Meta-analysis frames the reflective coding matrix in the human ecology enhancing the initial interview data coding and increasing the researcher's theoretical sensitivity by establishing a grand tour question that springs from a theoretical position (see Figure 5). Developing a theoretical position using meta-analysis maximizes opportunities to compare events, incidents, or happenings to determine how a category varies in terms of its properties and dimensions.

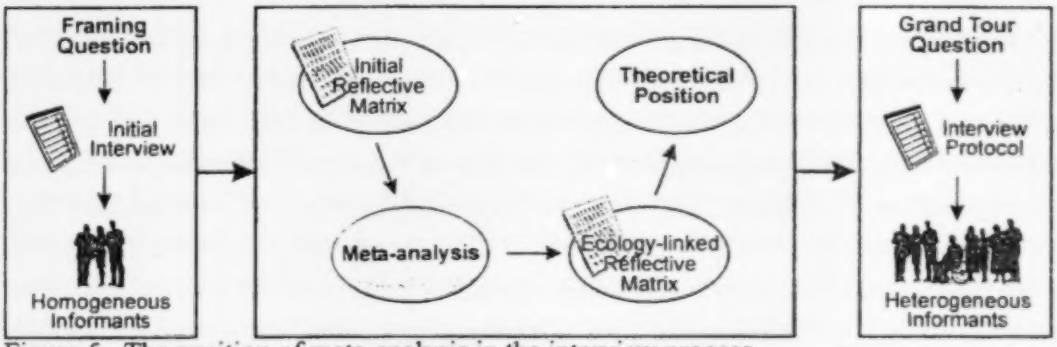

Figure 5. The position of meta-analysis in the interview process.

For this study, the meta-analysis theoretical position can be stated as: An adult education graduate student who successfully establishes a research topic, formulates an initial research hypothesis, designs a research plan, and commits to strive for research completion has been led to this path by a caring guide, a watchful mentor, or a powerful life experience. Thus the initial framing question of "How are dissertation topics discovered, developed, and chosen?" fails to adequately address this theoretical position because it fails to connect with the facets of risk.

Meta-analysis provides insight into a more appropriate grand tour question: "What guides and signposts direct a research journey?" This grand tour question resonates with the homogeneous informant data and provides a rich stage for interviews

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with a heterogeneous pool. Within the heterogeneous pool the researcher could dialog with graduate students from other disciplines, students who discontinued studies, and students from other universities. All informants could speak to the posed grand tour question based on their current interactions with their graduate student research ecology.

Formal interview, analysis, and interpretation using a larger, heterogeneous informant pool develop, densify, and saturate the core category. Through researching the extant literature, establishing fit and relevance in the research ecology, and verifying informant data, the emergent theory is more focused and guided by the theoretical position developed during meta-analysis. Glaser (2001) states that "One property of grounded theory is that constant generation, conceptual saturation, and the verification impact lead to constant modification, which yields a dense, rich substantive theory. And if diverse comparison groups are used, the result is a dense formal theory." A theoretical position raised to theoretical completeness may become a theory for research exploration through action applied to a wider community of adult learners than graduate students.

The protocol used in formal interviews must include potential main, probe, follow-up, and norming questions for emergence of a theory of value to students, professors, and administrators. Student barrier identification and resolution strategies are critical to administrators monitoring graduation requirements, developing recruitment strategies, establishing entrance requirements, and tracking completion rates. Awareness of these barriers and strategies is important to major professors and dissertation advisors, the guides for graduate students, to detect signs of pending problems, to effectively mentor students, and to provide scaffolding techniques to move beyond a barrier. And

graduate students gain problem solving and success strategies from dialog with master practitioners who are part of the academic learning ecology.

Conclusion

Using meta-analysis, a researcher can establish the topology of the research study. Theoretical conditioning, selective questioning, and meta-analysis steps allow the researcher to develop an understanding of and appreciation for the research ecology before establishing a framing question for the initial interview protocol. Initial interview data acquired from a homogeneous informant pool are analyzed and interpreted using a reflective coding matrix. Meta-analysis provides a reflective pause following the initial interview to revisit the data framed in the study ecology and to establish a theoretical position. The theoretical position allows us to more thoughtfully pose a relevant grand tour question. This developed grand tour question will resonate with a larger, more diverse informant pool. The product of a grounded design that includes the inductive steps of ecology exploration, theoretical conditioning, selective questioning, and meta-analysis is a grand tour question based in the human ecology. Formal interviews scaffolded by a grand tour question developed using meta-analysis provide rich interview analysis and interpretation processes from which theory emerges.

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Tables

Table 1. Initial interview protocol

Table 2. Group reflective matrix

Table 3. Second reflective coding matrix following meta-analysis

Table 1

Framing Question

How are dissertation topics discovered, developed, and chosen?

Main questions and probes

1. Where are you in your dissertation topic selection process?

   If you have an actual topic, what is it?

   If you don't have a topic, what are some of your ideas of focus?

   If you are still in the early stages, what are some of your passions?

2. Why did you select this passion, focus, or topic?

   What are some of your personal connections to the topic?

   In what ways do you view this as comfortable or challenging topic?

3. What types of expertise do you bring to this topic?

   What kind of previous research have you done in this area?

   Who are possible mentors on the topic?

   What research methods have you used before?

   What research methods do you plan to use on this topic?

4. What is the end result of your research?

   How will your life be different after the project is completed?

   How will the topics be different upon completion?

   What are your goals for future development of the topic?

Reflective Coding Matrix								
Category Scaffolding	**Motivational Influences**							
Properties	**Passion**		**Personal Connections**		**Education**		**Goal Result**	
Process	**Intrinsic Forces**	**Extrinsic Forces**	**Intrinsic Forces**	**Extrinsic Forces**	**Intrinsic Forces**	**Extrinsic Forces**	**Intrinsic Forces**	**Extrinsic Forces**
Dimensions	No topic selected yet, Challenging (mentioned by 3 informants); level of expertise - novice; uncharted territory (mentioned by 2 informants); passion for topic; insider connection to topic	Topic gestational based on experience with labor and delivery; Challenge of the topic - Close to information; Wants to be involved; Within comfort zone (mentioned by 3-informants); Coaching level of expertise	Personal Connections (mentioned by 2 informants); related to subject; Personal experience in labor and delivery; Life experiences are linked to topic; Topic is biographical; Empathy for those in the study group; Cares for people in the study group (mentioned by 2 informants)	Study of marital relationships; Mother as mentor; Professor as mentor; Caring mentor	Applied/previous hands on experience (mentioned by 2 informants); Case studies; Expertise due to exposure to people; Prior quantitative experience (mentioned by 3 informants); Work experience	Studied other books on the topic; Examine existing programs; Relates to thesis work; Undergraduate classes; Graduate classes/degrees (mentioned by 4 informants); Past formal or higher education (mentioned by 2 informants); Educational topic relates to topic; Literature Review; Competent - level of expertise; Expertise	Wants to teach in higher education; Teach nurses what makes or identifies caring behavior; qualitative product that can be beneficial to anyone or service providers; Formulating a theoretical approach; Celebrate the life of the subject; biographic lessons of marital relationships; Celebrate the relationships of the informants; Write a book (mentioned by 2 informants)	Formulating research goals; relates to accreditation; Topic-accreditation focus; Topic focus of graduate programs/protocols; Theory leads to accreditation model; Catalyst for further research; Spawns further research on subject of couples; Justify funding;
Context	**Dissertation Topic Selection**		**Dissertation Topic Selection**		**Dissertation Topic Selection**		**Dissertation Topic Selection**	
Strategies for Understanding the Consequences	CAPABILITY		**Pathfinding**		**Knowledge Base**		**Sharing**	

Table 2.

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Reflective Coding Matrix		
Category Scaffolding	**Motivational Influences**	
Properties	**Level of Risk**	
Process	**Challenge – High Risk**	**Comfort – Low Risk**
Dimensions	No topic selected yet, Challenging (mentioned by 3 informants); level of expertise - novice; uncharted territory (mentioned by 2 informants); Wants to teach in higher education; Teach nurses what makes or identifies caring behavior; qualitative product that can be beneficial to anyone or service providers; Formulating a theoretical approach; Write a book (mentioned by 2 informants); Formulating research goals; Theory leads to accreditation model; Catalyst for further research; Spawns further research on subject of couples; Justify funding; *Topic needs direction; Concerned that the discipline isn't refined (wants more in-depth knowledge and enlightenment); Discipline needs direction; Work on improving integrity of discipline; Developing a hypothesis; Has not taken preliminary exams; Exploration phase - several topics in mind; Discipline is greatly needed in society	Passion for topic; Insider connection to topic; Topic gestational based on experience with labor and delivery; Challenge of the topic - Close to information; Wants to be involved; Within comfort zone (mentioned by 3 informants); Coaching level of expertise; Personal Connections (mentioned by 2 informants); Related to subject; Personal experience in labor and delivery; Life experiences are linked to topic; Topic is biographical; Empathy for those in the study group; Cares for people in the study group (mentioned by 2 informants); Study of marital relationships; Mother as mentor; Professor as mentor; Caring mentor; Applied/previous hands on experience (mentioned by 2 informants); Case studies; Expertise due to exposure to people; Prior quantitative experience (mentioned by 3 informants); Work experience; Studied other books on the topic; Examine existing programs; Relates to thesis work; Undergraduate classes; Graduate classes/degrees (mentioned by 4 informants); Past formal or higher education (mentioned by 2 informants); Educational topic relates to topic; Literature Review; Competent level of expertise; Expertise; Topic-accreditation focus; Relates to accreditation; Topic focus of graduate programs/protocols; Celebrate the relationships of the informants; Celebrate the life of the subject; Biographic lessons of marital relationships; *Has a working hypothesis
Context	**Dissertation Topic Selection**	
Strategies for Understanding the Consequences	**Pathfinding**	

Table 3.

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